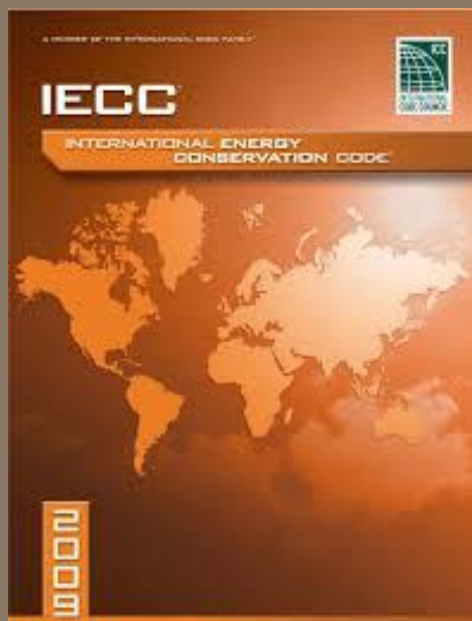




GA Energy Codes Update – A Step Ahead!



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GA Energy Codes – A Step Ahead!

- This session describes how Georgia is one step ahead of most states with adoption of Energy Codes by having an open consensus codes adoption and amendment process.

Highlights include:

- GA's requirement for mandatory residential DET testing,
- DET verifier certification and training,
- DET equipment loan program,
- Commercial and residential compliance evaluation studies,
- Local building department pilot study on effective enforcement of GA's Energy Code. **(2009 IECC)**

GA's State Codes Adoption and Amendment Process – SCAC

- ❑ The Uniform Codes Act establishes mandatory statewide building codes effective on October 1, 1991. **e.g. 2009 IECC**
- ❑ The Act creates the State Codes Advisory Committee (SCAC)
- ❑ The SCAC meets 3-4 times/yr and plays a major role in the development, review and recommendation of GA's codes.
- ❑ The committee is made up of 21 members who are experts in the various codes, e.g. mechanical, plumbing or electrical
- ❑ The members include building and fire officials, design engineers, elected leaders, builders, and other groups **(utilities)** chosen to represent the interests of GA's citizens.

GA's Open Consensus Code Adoption Process – Task Forces/Subcommittees

- ❑ GA's Open Consensus Code Adoption Process is conducted in accordance with the GA Administrative Procedures Act.
- ❑ All meetings are open to the public and interested parties.
- ❑ Task forces and subcommittees are formed by the SCAC to consider/review new code editions and **GA amendments**.
- ❑ Members are appointed by the SCAC and carefully selected based on their technical expertise in the respective codes.
- ❑ Task forces and subcommittees report back to the SCAC which forwards its recommendations to DCA's Board for final action.
- ❑ Public Notice is given and a Public Hearing is held before any new code editions and GA amendments are adopted by DCA.

New GA Energy Code, Mandatory DET Testing and Verifier Certification

- ❑ On **January 1, 2011**, the **International Energy Conservation Code [IECC] 2009 Edition** with **2011 GA Supplements and Amendments** became mandatory and applicable statewide!
- ❑ The **2011 GA supplements and amendments** include:
 - ❑ **New mandatory testing requirements to verify the duct and envelope tightness in new residential construction.**
 - ❑ **New requirement for all DET testing to be conducted by a Certified DET Verifier.**
 - ❑ **New definition of Certified Duct and Envelope Tightness (DET) Verifier.**

Mandatory DET Testing Requirements

- **Building envelopes** in all new residential buildings must achieve less than **7** air changes/hr @50 Pascals (**7 ACH50**).
- **Duct tightness** must be verified by any of the following:
 - **Duct systems** can be tested either at **rough in** or **post-construction** with the total leakage test **OR** at post-construction with the leakage to the outside test.
 - Rough-In Total (RIT) Leakage must be less than or equal to **6 CFM25 per 100 square feet** of conditioned floor area served by that particular duct system.
 - Post-Construction Total (PCT) Leakage must be less than or equal to **12 CFM25 per 100 square feet** of conditioned floor area served by that particular duct system.
 - Post-Construction Leakage to Outside (PCO) must be less than or equal to **8 CFM25 per 100 square feet** of conditioned floor area served by particular duct system.

DET Verifier Certification

- ❑ **DET Testing** shall be conducted by a **certified DET verifier**:
 - ❑ Certified Home Energy Rating Systems (HERS) rater, or
 - ❑ Certified Home Performance with ENERGY STAR contractor, or
 - ❑ Building Performance Institute (BPI) analyst, or
 - ❑ Anyone who successfully completes a certified **DET verifier course** approved by DCA.
- ❑ **DET testing** is conducted by blower door and duct blaster pressure test. The DET testing results are required to be listed by the DET Verifier **on a permanent certificate** posted on or near the electrical panel or air handler. **See sample certificate in GA Appendix D.**
- ❑ **Important Note:** Although the new **GA State Energy Code** was became effective on January 1, 2011, implementation of DET testing was delayed statewide by DCA waiver until July 1, 2011.

Statewide Energy Code Training

- ❑ DCA helped coordinate **42 statewide workshops** on the new 2009 IECC with Georgia Amendments and ASHRAE Standard 90.1-2007.
- ❑ The 3 types of workshops were: **Residential Energy Code, Commercial Energy Code and Duct and Envelope Tightness (DET) Verifier Training**
- ❑ The workshops were conducted by **Southface Energy Institute**.
- ❑ Important note: The DET verifier training resulted from the new GA amendment requiring DET testing in all new residential construction.
- ❑ Feedback from the workshop participants included: providing more specific **“hands-on”** field training for design professionals, licensed contractors, building officials and the construction industry on how to properly design, construct and inspect new and existing buildings.



Southface



Statewide DET Equipment Loan Program

- ❑ In 2011, the Georgia Environmental Finance Authority (GEFA) provided additional **ARRA funding** for DCA to implement a new statewide DET equipment loan program in GA.
- ❑ DCA purchased **30** new blower door and duct blaster testing kits.
- ❑ DCA then issued a **CDBG grant** to Home Builders Association of Georgia (HBAG) to administer the equipment loan program.
- ❑ DCA **loaned** the new DET testing equipment to HBAG for **2 years** after which time they could keep the used DET equipment and continue to administer the equipment loan program **voluntarily**.
- ❑ The DET testing equipment was made available at local HBAs for members or anyone to rent and use locally for a low rental fee.



Commercial Energy Code Compliance Evaluation Pilot Study

- ❑ In 2010, GA was selected by **DOE's Building Codes Energy Program (BCEP)** in partnership with the **Southeast Energy Efficiency Alliance (SEEA)** to participate in a "State Energy Code Compliance Pilot Study".
- ❑ Study will assist the state and construction industry with meeting DOE's requirement for all commercial and residential buildings to be at least **90 percent compliant with 2009 IECC and ASHRAE 90.-2007 by 2017.**
- ❑ DCA established a **Commercial Energy Code Compliance Working Group** to help locate and obtain the required random sample buildings and to make recommendations regarding the results of the study.
- ❑ The group was comprised of **stakeholders** representing both the **public and private sectors**, such as, state and federal energy agencies, architect and engineers, general contractors and building officials.
- ❑ The group recommendation's were to provide **statewide training and educational opportunities** for design professionals, contractors, building officials, construction industry and trade groups on how to properly design, specify, construct, inspect and commission buildings to fully comply with the new **GA state energy code.**

Commercial Energy Code Compliance Evaluation Pilot Study

- ❑ DCA conducted **online survey** of local jurisdictions on energy code enforcement.
- ❑ The survey results were used to determine **key barriers** faced by local jurisdictions in improving code compliance. **Impediments** to verifying code compliance were lack of: **education, time, money, equipment, and code books.**
- ❑ DCA contracted a **third party evaluator**, B & F Technical Codes Consultants, to conduct the 44 random building plan reviews and on-site building evaluations. The confidential information provided online by the local jurisdiction and the contractor was directly input into a **Score + Store database** maintained by DOE's Pacific Northwest National Laboratory (PNNL).
- ❑ While informative and helpful, the compliance data collected from individual buildings and jurisdictions **was not made public**. DCA submitted a final report with detailed findings of the study to DOE in March 2011. Results: DCA is very pleased to announce the **overall calculated statewide compliance rate is 80%!**

Residential Energy Code Compliance Evaluation Pilot Study – **Just started!**

- ❑ In Oct. 2014, DOE awarded 8 states funding, including GA, to implement targeted energy code education and outreach.
- ❑ Project team includes: **DCA, GEFA, SEEA, Southface and Advanced Energy.**
- ❑ The goal of this **three-year** study is to demonstrate whether investment in **education, training, and outreach programs** can produce a significant, measurable change in single-family detached home energy savings
- ❑ In early 2015, the project team held **3 regional stakeholder meetings** to collect feedback on the current energy code. :



Residential Energy Code Compliance Evaluation Pilot Study – 3 Phases

- **Phase I (6-9 months, early 2015):** The study will begin with the project team traveling around the state to visit homes under construction. These observations will be compiled to understand how much energy an average brand new Georgia home will use upon completion. If the average new Georgia home uses more energy than anticipated, based on the current energy code, the project will move to Phase II.
- **Phase II (18-24 months, mid 2015 – late 2017):** The project team will implement targeted training, education and outreach based on observations in Phase I and energy code feedback from the construction industry. Targeted efforts will focus on groups including but not limited to builders, trades, code officials, architects and engineers.
- **Phase III (6 months, late 2017):** The study will conclude with the project team visiting additional new homes under construction to determine if the amount of energy an average new Georgia home is less than when the study began.

Residential Energy Code Compliance Evaluation Pilot Study – Metrics

- ▣ Field Data = **63** observations of **8** key items:
 - ▣ Envelope tightness (ACH50)
 - ▣ Window SHGC
 - ▣ Window U-factor
 - ▣ Exterior wall insulation
 - ▣ Ceiling Insulation
 - ▣ High-efficiency lighting
 - ▣ Foundation insulation (floor/basement/slab)
 - ▣ Duct leakage

Residential Energy Code Compliance Evaluation Pilot Study – Goals !

- The **goal** is to support GA's residential construction industry and market:
 - **Target** energy code specific **education, outreach and support**.
 - **Consistant** code implementation and enforcement across GA.
 - **Assure** GA homebuyers their new homes are energy efficient.
- Information from individual homes visited will be **confidential**.
- Permit holders will be contacted before the project team visits.
- Homes that have not yet received a **Certificate of Occupancy**.
- Homes will only be visited **once** during the entire study.
- For more info visit SEEA at: <Http://www.seealliance.org/policy>
- Contact Lauren Westmoreland: lwestmoreland@seealliance.org

Local Building Department Pilot Study

- In 2012, **Georgia Environmental Finance Authority (GEFA)** completed a Pilot Study of Local Building Departments to promote, increase and monitor statewide compliance with the new GA State Energy Code. **2009 IECC w/GA Amendments.**
- Purpose was **to evaluate permitting and inspection process** of a local building inspections department and make recommendations for streamlining operations.
- Southface Energy Institute conducted the pilot study with assistance from DOE's BECP and formed a steering committee comprised of key stakeholders from GA's construction industry. E.g. BOAG, HBAG, ACCG, GMA, DCA, SEEA and others.
- Reviewed **local administrative operations, revenue stream, permits and inspections procedures** to find ways to fund improved energy code compliance.

Local Building Department Pilot Study

- ❑ The study looked at best practices of several other local jurisdictions and made recommendations for implementing these best management practices.
- ❑ The final outcome was **a set of best management practices/guidelines** which local building departments can voluntarily incorporate into their local administrative procedures and building code enforcement ordinances.
- ❑ A copy of the final report and best management practices is available to download at:
<http://www.dca.state.ga.us/development/ConstructionCodes/programs/EnergyCodePilotStudy.asp>.

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